MASS. HS 30.37 :995

UMASS/AMHERST
312066 0362 8834 7

Weapon Injury Update

News from the Weapon-Related Injury Surveillance System August 1995

2,500 Shot or Stabbed in Violent Incidents in 1994, Massachusetts Hospitals Report

More than 2,500 people–over 1,000 of them teenagers and young adults–were shot or stabbed in Massachusetts in violence-related incidents, according to reports filed by hospital emergency departments in 1994.

Last year marks the first year in which all acute care hospitals in the state reported weapon injuries to the Department of Public Health as part of the Weapon-Related Injury Surveillance System (WRISS). The reporting system is the first of its kind in the nation to track stabbings and shootings treated in the emergency department.

Among Massachusetts residents of all ages, hospitals reported treating 662 violence-related gunshot wounds and 1,885 sharp instrument wounds. Taking into account that about a quarter of the injuries treated in hospitals may go unreported, an estimated 3,400 victims were treated for gun or knife assaults last year.

The age group at highest risk for violence-related injury was teens and young adults, ages 15-24, whose injury rate was *seven times* higher than that of adults over age 24. Hospitals reported treating 394 teens and young adults for gunshot wounds and 751 for stabbings. Within that age group, teenagers had a higher rate of gunshot wounds than the 20-24 year-olds, although their rate of sharp instrument assaults was about the same.

The rate of stabbings and shootings combined was highest in the larger urban areas. Statewide, the average weapon injury rate was 42.3 victims for every 100,000 residents. Rates were highest in the cities of Brockton (155.2), Springfield (151.0), and Boston (146.1). The rate was also high in Chelsea (135.8), in spite of its relatively small population (29,000). Falling into a second tier among the cities with the highest weapon injury rates were Lawrence, Holyoke, Worcester, Lynn, New Bedford and Revere.

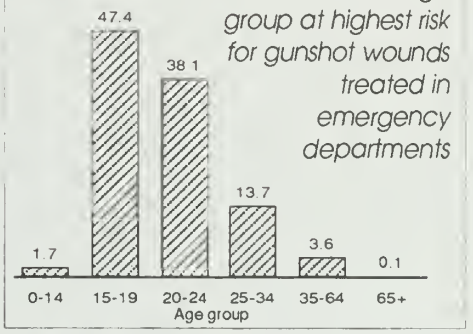
Not all big cities saw high rates of weapon injuries. For example, hospitals reported only 1 case from Newton (population 83,000) and 2 from Brookline (population 55,000). Cambridge, Fall River, Lowell, Quincy, and Somerville residents also had relatively low injury rates compared to other large cities (see Figure 1), even after adjusting for different levels of underreporting in each city. WRISS staff review records in hospitals serving cities of over 75,000 population and selected other hospitals statewide in order to ascertain reporting levels.

The table on page 4 and map on page 5 show rates of weapon-related injuries broken down by community. Towns with fewer than 25,000 residents are not listed separately because the combination of few cases

Continued on page 6

TEENS & GUNS

Teens ages 15-19 were the age group at highest risk for gunshot wounds treated in emergency departments



Violence-related gunshot wounds per 100,000 population by victim's age group

1994 Shootings and Stabbings

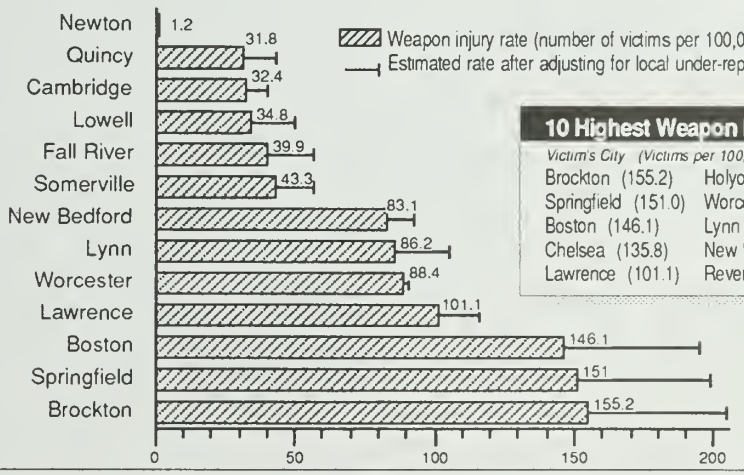
Victims of Gunshot Wounds and Sharp Instrument Wounds Treated in Mass. Emergency Departments*

	cases	rate/100k
Massachusetts Victims	2865	47.6
• Violence-Related	2547	42.3
Gunshot Wounds (GSW)	662	11.0
Sharp Instrument	1885	31.3
• Accidental GSW	163	2.7
• Self-inflicted GSW*	47	*
• Unknown GSW	108	1.8
Out-of-State Victims	63	NA
Total Victims	2928	

* Fatalities not transported to Massachusetts emergency departments (EDs) are not reported here. 1994 mortality data are not yet available. Most self-inflicted GSWs result in death and 2/3 are never seen in the ED.

Violence-Related Stabbings and Shootings, 1994

Rate per 100,000 in Cities Over 75,000 Population, by Victim's City of Residence



10 Highest Weapon Injury Rates

Victim's City (Victims per 100,000 residents)

Brockton (155.2)	Holyoke (91.5)
Springfield (151.0)	Worcester (88.4)
Boston (146.1)	Lynn (86.2)
Chelsea (135.8)	New Bedford (83.1)
Lawrence (101.1)	Revere (70.1)

"It Was an Accident..."

Follow-up Survey of Gun Accident Victims Planned

Unintentional gunshot wounds accounted for 17% of all gun injuries reported to the Department of Public Health's Weapon-Related Injury Surveillance System (WRISS) in 1994. Among 980 Massachusetts residents treated for gunshot wounds in hospital emergency departments across the state, 163 were the result of gun accidents. Children and youth age 19 and under were disproportionately represented among gun accident victims, accounting for half (50%) of all cases.

Although gunshot wounds that are unintentionally inflicted are often less severe than those that are intentionally inflicted, 20% of the accident victims were admitted or transferred for care and three victims died in emergency care; 59% were discharged or walked out, and 20% of the hospital reports were missing this information. According to death certificate data, five to ten deaths each year result from gun accidents.

BB and pellet gun injuries comprised 57% (92) of all unintentional gunshot wounds reported to WRISS. About three-quarters of these injuries were to children and youth. These injuries are often perceived as minor, but the American Academy of Opthalmology has determined that BB and pellet guns are a major cause of serious eye injury and blindness, particularly for adolescent boys. Indeed, over one third (36%) of all BB and pellet gun injuries to youths were to the face or head.

Among the remaining 71 cases, 25 involved handguns (mostly semi-automatic pistols), 6 resulted from shotguns, 7 from rifles, and weapon type was not classified in 33 cases.

The map on page 3 indicates that unlike gun assaults, gun accidents do not cluster in any part of the state. The statewide incidence rate for gun accidents was 2.7 victims for every 100,000 residents. The rate in Boston, where 12 injuries were reported, was lower than the rate reported in towns with populations under 25,000.

Very little has been published about unintentional gunshot wounds, particularly those that are nonfatal. The WRISS project will survey patients who have sustained unintentionally inflicted gunshot wounds in order to learn more about the risk factors associated with gun accidents. Our findings will be important for identifying prevention strategies most appropriate for Massachusetts. Gun accidents, though generally less numerous and less severe than gun assaults, are potentially the easiest to prevent. For instance, a United States General Accounting Office study of unintentional gunshot wound fatalities concluded that one-third of the deaths might have been prevented by safety devices such as trigger locks and loading indicators.

The WRISS survey includes questions about specifically where and how the injury occurred, the type of gun involved, who owned the gun, where the gun was purchased, why it was acquired and how it was stored, alcohol/drug involvement, payor source for medical care, loss of productivity measures, and victim's sociodemographics. Please call Heather McLaughlin at (617) 727-9696 if you would like to discuss the survey or would like a copy of the survey instrument.

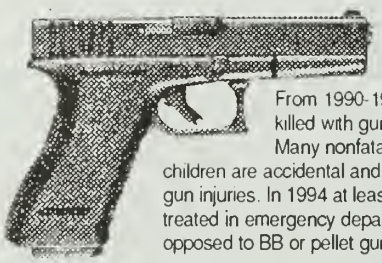
Gunshot Wound Victims, Mass. 1994

	Violence-Related		Accidental	
Total	662	100.0%	163	100.0%
0-14 yrs	20	3.0%	47	28.8%
15-19 yrs	197	29.8%	34	20.9%
20-24 yrs	197	29.8%	22	13.5%
25-34 yrs	150	22.7%	24	14.7%
35-64 yrs	72	10.9%	32	19.6%
65 yrs +	1	0.2%	2	1.2%
Missing	25	3.8%	2	1.2%
Male	598	90.3%	143	87.7%
Female	49	7.4%	17	10.4%
Missing	15	2.3%	3	1.8%
Black	328	49.5%	10	6.1%
White	121	18.3%	131	80.4%
Hispanic	157	23.7%	10	6.1%
Other/Msng	56	8.5%	12	7.3%
Home	88	13.3%	74	45.4%
Street	359	54.2%	15	9.2%
Work	7	1.1%	7	4.3%
School	4	0.6%	0	0.0%
Other	80	12.1%	32	19.6%
Missing	124	18.7%	35	21.5%
Handgun	73	11.0%	25	15.3%
Long Gun	15	2.3%	13	8.0%
BB/Pellet	37	5.6%	92	56.4%
Unspecified	537	81.1%	33	20.2%

What's accidental?

On the face of it, the distinction between accidental and violence-related gunshot wounds seems simple enough. When one unintentionally shoots oneself or another person during a nonviolent circumstance such as cleaning a gun or playing with a gun thought to be unloaded, cases are coded as "accidental." When one shoots another person during the course of an assault or threat, the case is considered "violence-related." What about when a child is the unintended victim of a drive-by shooting? Or someone threatens another person with a gun and during a struggle the gun goes off unintentionally? Or a person shoots an attacker in self-defense? Because all of these cases are gunshot wounds resulting from assaults or threats, we code them as "violence-related."

Bullets & BBs: Gunshot Wounds to Children 0-14 yrs.

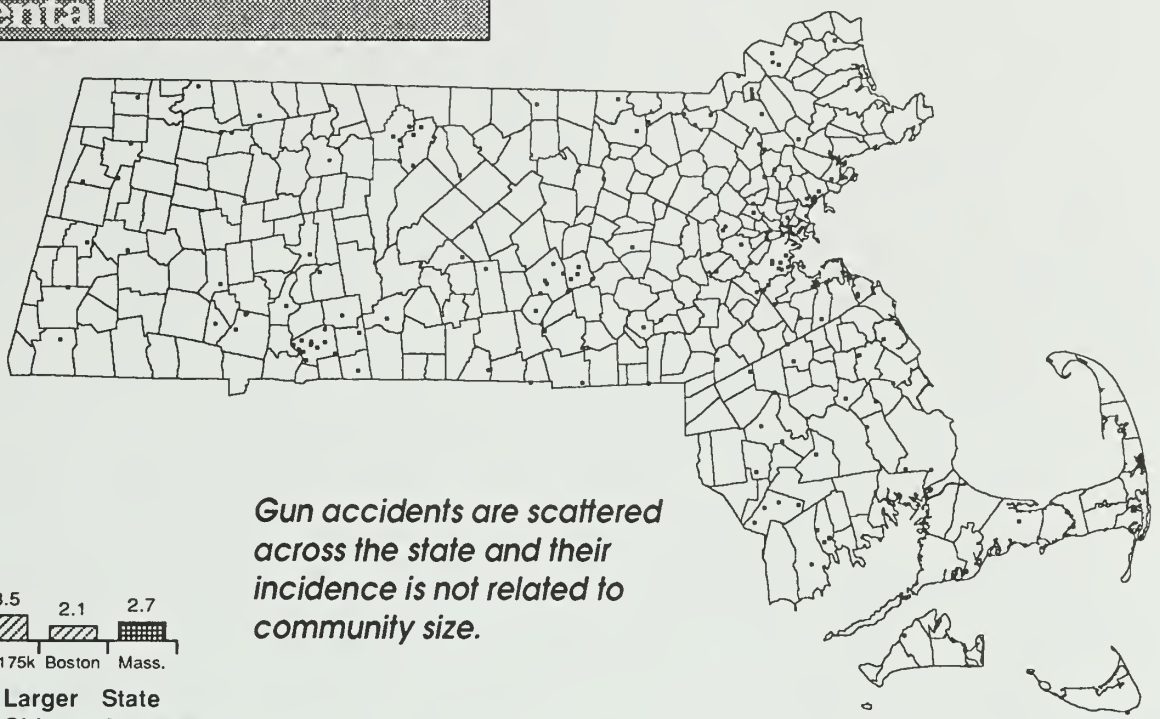


From 1990-1993, 28 children were killed with guns in Massachusetts. Many nonfatal gunshot wounds to children are accidental and most of these are BB gun injuries. In 1994 at least 17 children were treated in emergency departments for firearm–as opposed to BB or pellet gun–injuries.

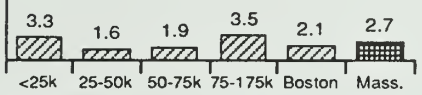
Gunshot Wounds to Children Treated in Massachusetts Emergency Departments, 1994 (77 Cases)

Gunshot Wounds In Massachusetts

Accidental



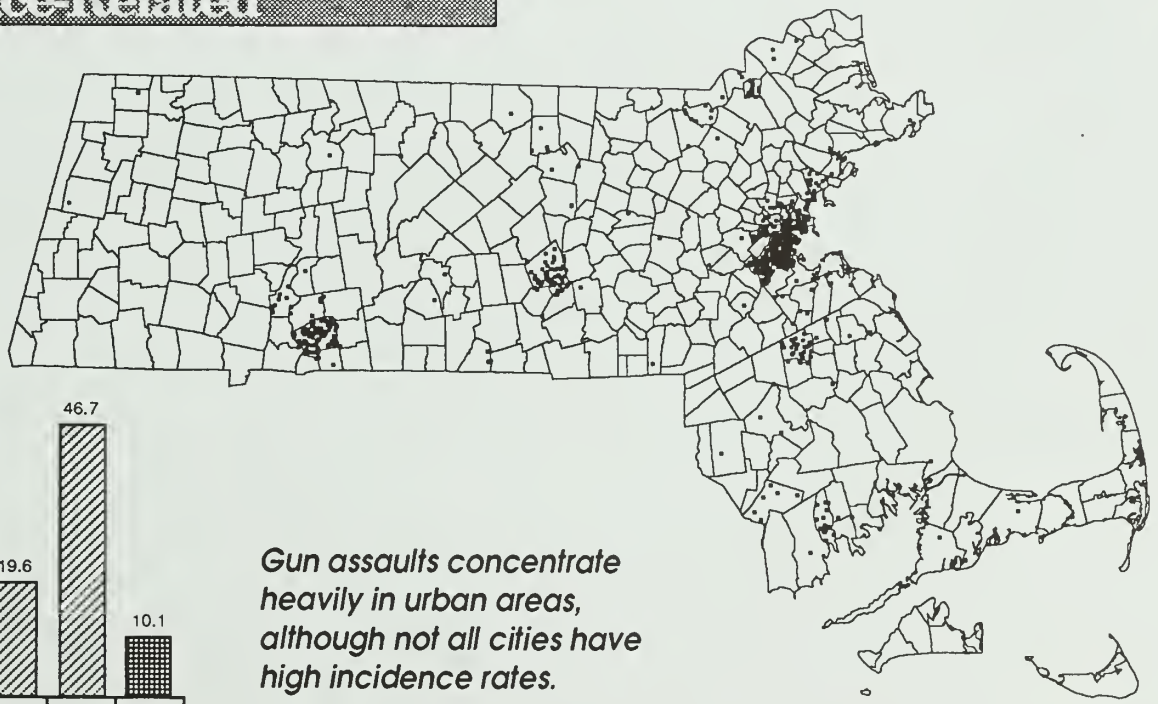
Number of Victims per 100,000 Residents



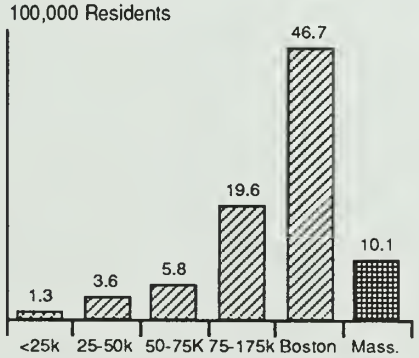
Smaller Towns | Larger Cities | State Average

Gun accidents are scattered across the state and their incidence is not related to community size.

Violence-Related



Number of Victims per 100,000 Residents



Smaller Towns | Larger Cities | State Average

Gun assaults concentrate heavily in urban areas, although not all cities have high incidence rates.

Source, all figures: Weapon-Related Injury Surveillance System, Mass. Dept. of Public Health

Violence-Related Gunshot Wounds and Sharp Instrument Wounds

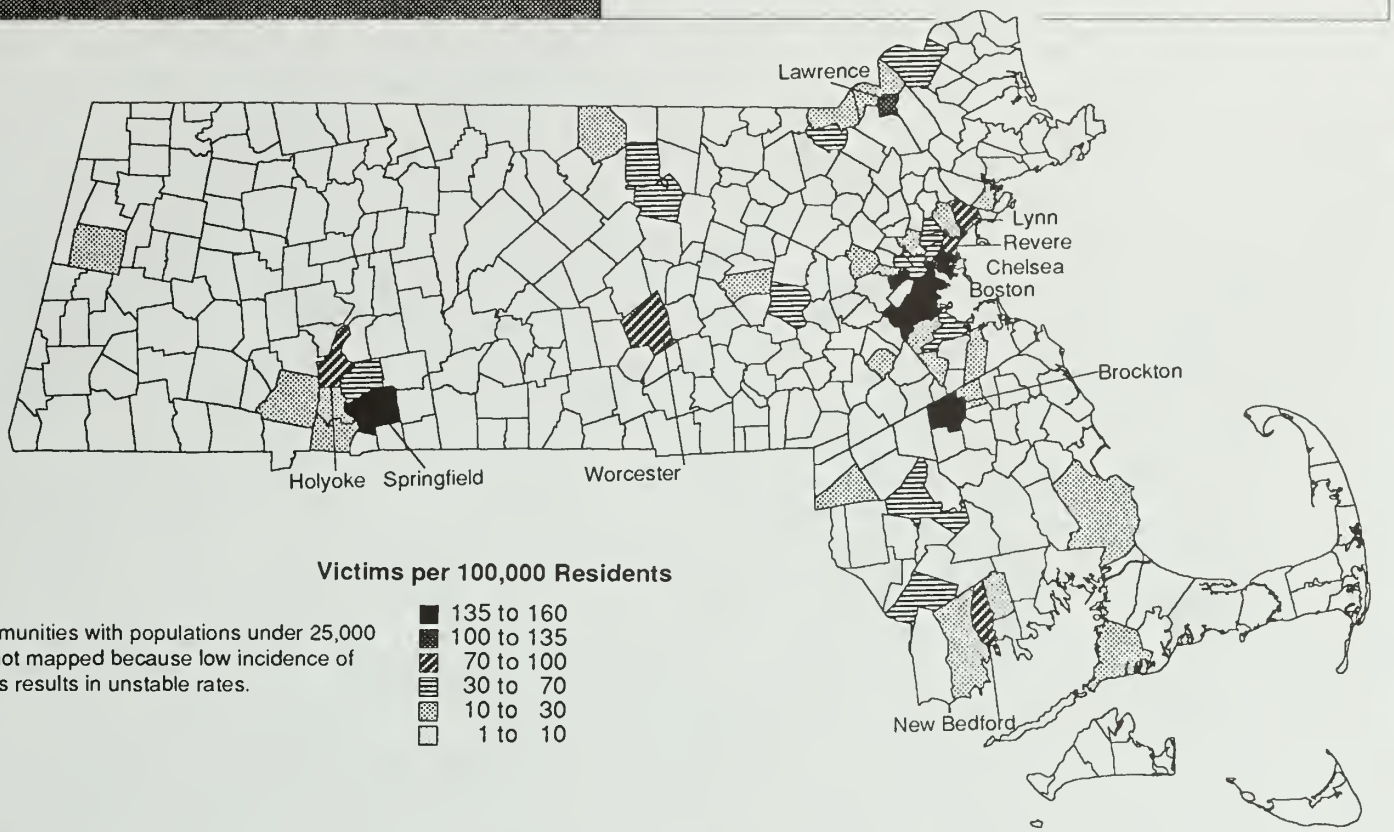
1994 Cases Reported by Massachusetts Hospital Emergency Departments to Mass. Dept. of Public Health*

Victim's City/Town	'90 Population	Reported Cases	Rate per 100,000 pop.	Victim's City/Town	'90 Population	Reported Cases	Rate per 100,000 pop.
Group 1: Cities/towns over 175,000 population							
Boston	574,283	839	146.1				
Group 2: Cities/towns 75,000-175,000 population							
Brockton	92,788	144	155.2	Newton	82,585	1	1.2
Cambridge	95,802	31	32.4	Quincy	84,985	27	31.8
Fall River	92,703	37	39.9	Somerville	76,210	33	43.3
Lowell	103,439	36	34.8	Springfield	156,983	237	151.0
Lynn	81,245	70	86.2	Worcester	169,759	150	88.4
New Bedford	99,922	83	83.1	*Group 2 Total*	*1,136,421*	*849*	*74.7*
Group 3: Cities/towns 50,000-75,000							
Brookline	54,718	2	3.7	Malden	53,884	22	40.8
Chicopee	56,632	23	40.6	Medford	57,407	15	26.1
Framingham	64,989	21	32.3	Waltham	57,878	12	20.7
Haverhill	51,418	25	48.6	Weymouth	54,063	9	16.6
Lawrence	70,207	71	101.1	*Group 3 Total*	*521,196*	*200*	*38.4*
Group 4: Cities/towns 25,000-50,000							
Agawam	27,323	3	11.0	Milford	25,355	0	0.0
Amherst	35,228	1	2.8	Milton	25,725	3	11.7
Andover	29,151	0	0.0	Natick	30,510	3	9.8
Arlington	44,630	4	9.0	Needham	27,557	1	3.6
Attleboro	38,383	5	13.0	North Attleboro	25,038	1	4.0
Barnstable	40,949	3	7.3	Northampton	29,289	2	6.8
Beverly	38,195	1	2.6	Norwood	28,700	3	10.5
Billerica	37,609	2	5.3	Peabody	47,039	2	4.3
Braintree	33,836	2	5.9	Pittsfield	48,622	8	16.5
Chelmsford	32,383	1	3.1	Plymouth	45,608	11	24.1
Chelsea	28,710	39	135.8	Randolph	30,093	7	23.3
Dartmouth	27,244	4	14.7	Revere	42,786	30	70.1
Dracut	25,594	3	11.7	Salem	38,091	7	18.4
Everett	35,701	17	47.6	Saugus	25,549	6	23.5
Falmouth	27,960	3	10.7	Stoughton	26,777	2	7.5
Fitchburg	41,194	17	41.3	Taunton	49,832	24	48.2
Gloucester	28,716	1	3.5	Tewksbury	27,266	0	0.0
Holyoke	43,704	40	91.5	Watertown	33,284	4	12.0
Leominster	38,145	12	31.5	Wellesley	26,615	1	3.8
Lexington	28,974	0	0.0	West Springfield	27,537	7	25.4
Marlborough	31,813	5	15.7	Westfield	38,372	8	20.8
Melrose	28,150	10	35.5	Woburn	35,943	2	5.6
Methuen	39,990	7	17.5	*Group 4 Total*	*1,519,170*	*312*	*20.5*
*Group 5: <25,000 population***				*Group 5 Total*	*2,265,355*	*215*	*9.5*
Massachusetts	*6,016,425*	*2,547*	*42.3*				

* Based on record reviews, hospitals report 70-80% of their cases. Pre-hospital deaths are not included in the reporting system.
** Towns < 25,000 population are not separately listed because low incidence of cases results in unstable rates.
*** Massachusetts total includes 12 homeless cases and 120 cases with unknown city.
Source: Weapon-Related Injury Surveillance System (WRISS), Massachusetts Department of Public Health

Victimization Rates, 1994

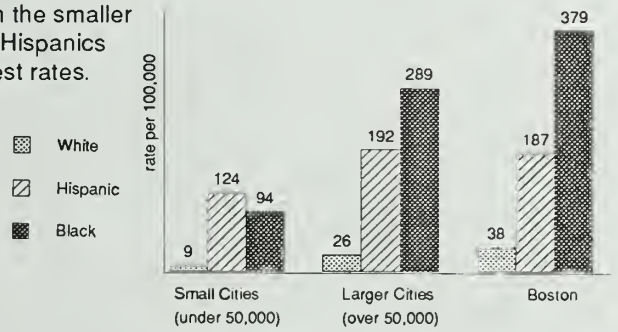
Victims of Violence-related Gunshot and Sharp Instrument Wounds Treated in Massachusetts Hospital Emergency Departments, 1994



Notes: Record reviews indicate hospitals report 70-80% of cases. Fatal cases not transported to a hospital are not part of the dataset. Rates are calculated using 1990 US Census Modified Age/Race/Sex file for Massachusetts.

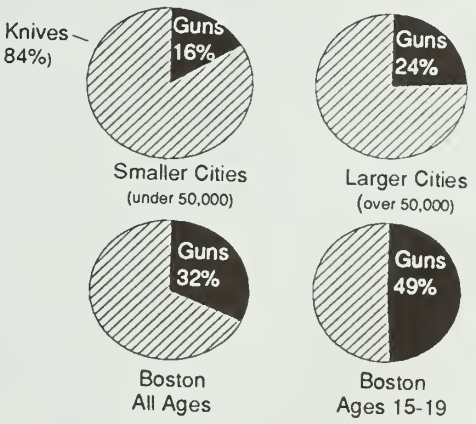
Race/Ethnicity

Black (non-Hispanic) residents had the highest assault injury rates in the larger cities and in Boston, but in the smaller communities Hispanics had the highest rates.



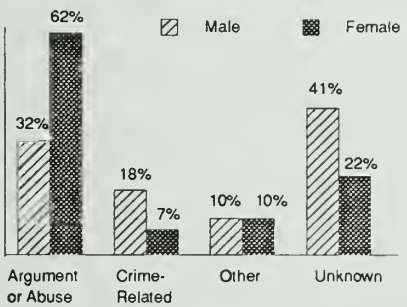
Guns vs. Knives

Knife injuries outnumber gun injuries in every community, but the percent of guns increases in the bigger population areas. In Boston, teenagers are as likely to be injured with a gun as with a knife.



Circumstance

Most gun and knife attacks on females result from arguments or other interpersonal issues; only 7% reportedly result from another crime such as robbery or drug trafficking. For males, the situation is less clear since 41% of the cases have unknown information. At least a third of the cases involve interpersonal issues.



Source, all figures: Weapon-Related Injury Surveillance System, Mass. Dept. of Public Health

Mass. Hospitals Treat Weapon Injury Victims

(Continued from page 1)

and small population size results in unstable rates which are poor indicators of local trends. Overall, communities with populations under 25,000 averaged 9.5 victims for every 100,000 residents (in contrast to the largest cities with populations over 75,000 which averaged about 75 victims per 100,000 residents). Two smaller communities stood out, however, as having an unusually high number of cases. These were Southbridge (12 cases, or a rate of 67.4) and Bridgewater (10 cases, or a rate of 47.1).

An area of particular concern for the bigger cities is that with increasing size of the community, not only did the overall injury rates increase, but the percent of gunshot wounds relative to stab wounds also increased. (See figure on page 5.) With gunshot wounds being five to ten times more deadly than sharp instrument wounds, the greater prominence of gun violence in the cities is a critical issue.

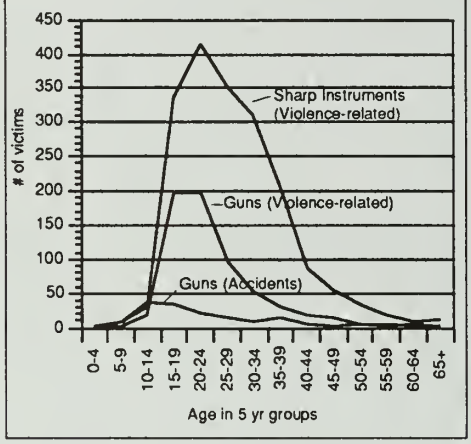
For both stabbings and shootings, black residents were at highest risk in large communities and in Boston, but in communities under 50,000 population, Hispanics were at highest risk. Half of all shooting victims in the state were black, compared to less than a third of the stabbing victims.

Male residents make up just under half of the Massachusetts population but represented 90% of the gunshot wound victims and 83% of the sharp instrument victims.

In addition to reports on violence-related gunshot wounds and stabbings, emergency departments also reported self-inflicted and unintentionally-inflicted gunshot wounds. In contrast to gun assaults, of the 47 people treated for self-inflicted gunshot wounds 70% were residents over the age of 25, and 60% were white. About half (53%) lived in communities with populations under 50,000. In contrast to violence-related gunshot wounds which are frequently nonfatal, about two-thirds of self-inflicted wounds result in death before reaching emergency departments and therefore are not reported to WRISS. On average, about 165 Massachusetts residents kill themselves with firearms every year.

A total of 163 unintentionlly-inflicted gunshot wounds were reported and are described on page 2 of this newsletter. An additional 108 records for gunshot wounds had insufficient information to assign type of intent. ▩

Age of Weapon Injury Victims
Massachusetts 1994



Weapon-Related Injury Surveillance System (WRISS)

WRISS is a project of the Mass. Department of Public Health in collaboration with Mass. Health Research Institute, Inc. WRISS is funded in part by a grant from the Centers for Disease Control and Prevention.

Newsletter Editor:
Catherine Barber (Project Director)

Project Staff:
Beth Hume
Laurie Jannelli
Heather McLaughlin
Maxine Schuster
N. Jeanne Scott

Principal Investigators:
Victoria Ozonoff
Catherine Barber

Weapon-Related Injury Surveillance System
Mass. Department of Public Health
150 Tremont St., 5th floor
Boston, MA 02111
(617) 727-9696

GOVERNMENT DOCUMENTS COLLECTION

JAN 20 1998

University of Massachusetts Depository Copy